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REPORTED PREVALENCE OF UNCONSCIOUSNESS FROM MECHANICAL IMPACT TO THE HEAD IN UNIVERSITY POPULATIONS DURING A FIFTEEN-YEAR PERIOD[1]

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Summary.—The prevalence of at least one episode of unconsciousness during childhood due to a mechanical impact to the skull was inferred by the response to one item embedded within a questionnaire of 140 items. 50% of the 633 university men and 33% of the 863 university women reported such unconsciousness; the prevalence did not change significantly between samples over a 15-yr. period. Multiple regression analysis indicated that the 10 items most strongly associated with the report of childhood unconsciousness did not explain more than about 10% of the variance. The majority of the items were those associated with complex partial epileptic-like signs and included (adult) episodes of memory blanks, mystical experiences, dissociation, and sudden meaningfulness.

A period of unconsciousness, due to the impact of mechanical energies to the skull, has been interpreted as a strong indicator of brain injury. As reviewed by Powell and Holmes (1995), the self-reported prevalence of at least one life-time episode of unconsciousness for young adults has ranged from about 4% to 40%. The Personal Philosophy Inventory (Persinger & Makarec, 1993), contains an item, Q21, which states "At least once during childhood, I hit my head (or was hit in the head) and blacked out." This study was completed to discern the prevalence of yes responses to this item and its (cross-sectional) change over time. The specific hypothesis was that people who have sustained an episode of unconsciousness due to a mechanical impact to the skull should report more indicators of temporal lobe lability.

All of the inventories for 633 men and 863 women who had been enrolled in first- or second-year psychology courses from the years 1982 through 1996 were extracted from a computer archive and analysed using SPSS software. One-way analysis of variance as a function of year indicated no significant differences or trends (polynomial) over time for the men ($F_{14,632} = 1.52$, $p > .05$) or the women ($F_{14,848} = 1.34$, $p > .05$). The mean and standard deviation for their ages (no significant difference between men and women) at the time of testing were 23.8 and 7.6 yr., respectively. Chi-squared analysis indicated that 50% of the men reported a period of unconsciousness relative to 33% of the women; the odds ratio 1.35 (95% confidence band 1.22 to 1.50) for men relative to women was significant statistically ($\chi^2 = 41.87$, $p < .001$; $phi = 0.17$). Consequently, data for the men and women were analyzed separately.

For men the eight strongest correlation coefficients occurred for items associated with reporting an episode of induced unconsciousness during childhood were Q18 (fallen asleep in one room but awakened in another: $r = .19$), Q23 (have stared at an object and it appeared larger and larger: $r = .13$); Q55 (walking in sleep: $r = .15$); Q75 (never had memory blanks: $r = -.13$), Q82 (smells from nowhere about once per month: $r = .16$), Q102 (brief confusion in a crowded area: $r = .11$), Q117 (I have frequent headaches: $r = .17$) and Q118 (tingling sensations

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along back of legs: $r = .16$). For women, these items were: Q12 (occurrences of events with special significance: $r = .15$), Q33 (people say I blank out while talking: $r = .15$), Q61 (compulsion to grip thumb within fingers: $r = .13$), Q90 (imitation of people in a movie I've seen: $r = .11$), Q102 (brief confusion in a crowded area: $r = .13$), Q110 (dreams of flying once per month: $r = .10$), Q118 (tingling sensations along back of legs: $r = .14$), Q138 (first mystical experience during teenage years: $r = .13$).

Multiple regression analysis, with maximum steps set = 10, produced a multiple correlation of .36 [adjusted $r^2 = 10\%$] for the men ($F_{10,612} = 8.86$, $p < 001$) and was composed (within the context of the equation) of positive responses to Q18, Q82, Q108 (when I start, I have a difficult time stopping), Q117, Q55, Q52 (happy most of the time), Q123 (before falling down an intense smell from childhood), and Q20 (sometimes people know what I'm thinking) plus negative responses to Q75 (never had memory blanks) and Q49 (I don't like everyone I know). The magnitudes of all partial regression coefficients were between .08 and .13. The equation for the women ($F_{10,843} = 10.21$, $p < .001$), which generated a multiple r of .33 (9% adjusted r^2) was composed positively by Q23, Q12, Q33, Q44 (wish to time-travel), Q138, Q55, Q20, Q132 (music while studying) and negatively by Q101 (there is an infinite force) and Q127 (sad when seeing a starving child in a commercial).

Most of the items associated (bivariately or during the construction of multiple regression equations) with a reported history of mechanically induced unconsciousness in childhood have been associated empirically (by factor analysis) or theoretically with the continuum of temporal lobe lability (Persinger & Makarec, 1993). The persistence of these symptoms and signs within a population of primarily healthy young adults whose intelligence is presumably at least average, suggests that events occurring approximately 10 to 20 years previously may have subtle effects upon the phenomenological profile of neurocognitive experiences. Obviously the primary caveats are the validity of questionnaire data and the intrinsic limitations of episodic memory.

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